REMARKS/ARGUMENTS

Prior to this Amendment, claims 13-24 were pending. By this Amendment, the specification is amended, claims 13, 15, 22 and 23 are amended and claims 25-28 are added. Subsequent to this Amendment Claims 13-28 are pending.

Favorable reconsideration is respectfully requested in view of the foregoing amendments and the following remarks.

ALLOWABLE SUBJECT MATTER:

It is first noted and appreciated that the Examiner stated that claims 15 and 23 are allowable, but should be rewritten in independent form, including all of the limitations of the base claim and any intervening claims. By the present Amendment, the applicant has amended claims 15 and 23 to be in independent form in accordance with the Examiner's instructions. It is therefore respectfully requested that the Examiner pass claims 15 and 23 to allowance.

ARRANGEMENT OF THE SPECIFICATION:

Th Examiner stated that Section Heads are not present in the specification. By the present Amendment, applicant has added appropriate Section Heads in accordance with the Examiner's suggestions.

CLAIM OBJECTION:

The Examiner first objected to claim 22 in that "10 $A.m^2$" should be - - 10 A/m^2 - -. The Examiner's statement is correct and the applicant makes the appropriate correction herein. It is respectfully requested that the Examiner withdraw the objection to claim 22.

REJECTION UNDER 35 U.S.C. § 102:

The Examiner rejected claims 13, 14, 16, 17, 19, 20-22 and 24 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,422,917 (Hayfield). Claim 13 is amended to distinguish Hayfield. It is true that Hayfield refers to a "titanium spring" in column 8, line 2. However, a "spring" is not necessarily an elongate element able to extend along inside the electrode body and causing the current to be uniformly distributed along the electrode.

Hayfield's spring is a simple clip. Unlike the present invention, Hayfield's clip does not extend along inside the electrode and contact its surface so as to cause a uniformly distributed current to flow through the electrode.

Claim 13 is amended to add the language "at a plurality of spaced apart locations along the length of the body" for causing the electrical current from the power source to be distributed substantially uniformly along the electrode. Hayfield, alone or in combination with any of the prior art of record, does not teach or suggest these claim limitations.

As defined, for example, in each of claims 13, 15, 20, 23 and 26, as amended, the electrode of the present invention is made of porous, low electrical conductivity material. To cause the density of the electrical current through the electrode body to be evenly distributed along the length of the electrode body, connection means is provided (and claimed) which contacts the surface of the body at a plurality of spaced apart locations along the length of the body. As a result, the density of the current flowing through the electrode body from one to the other of the inner and outer surfaces is substantially the same at different places along the

electrode. Without this arrangement, *i.e.*, if the connection means contacted the wall surface at a single point location, the current density would not be evenly distributed. Rather, it would be concentrated near the connection means. However, this is of most significance if the electrode comprises porous low electrical conductivity material. Thus, with the electrode of Hayfield, in which the pores are filled so as to form a relatively high conductivity surface coating, there is no need for the provision of connection means extending along the body and contacting its surface at a plurality of spaced apart locations. Please see the figure of Appendix A, attached hereto.

Therefore, the concept of Hayfield is different. In Hayfield, the electrode is made to have a relatively high conductivity along the length of the electrode by filling or coating it with conductive material. But that reduces the good effect of using porous low-electrical conductivity material such as TiO_x. The present invention retains such good effect while also ensuring a substantially uniform current distribution by providing connection means extending along and contacting the electrode at a plurality of spaced apart locations along the length of the electrode. This is new and is not obvious relative to Hayfield alone or in combination with any of the prior art of record.

REJECTION UNDER 35 U.S.C. § 103:

The Examiner rejected claim 18 under 35 U.S.C. § 103(a) as being unpatentable over Hayfield. The Examiner stated that Hayfield discloses the invention, but does not disclose that the tube is at least 200 mm long. The Examiner states that the subject matter as a whole would

have been obvious to one having ordinary skill in the art at the time the present invention was made because one of ordinary skill would have had the ability and knowledge to know that electrode length would be dependent on the particular application in which the electrode was to have been used.

Claim 18 depends from independent claim 13. For the reasons set forth above with respect to the rejection under 35 U.S.C. § 102, claim 13 is believed to be allowable. It is respectfully requested that the Examiner pass claim 18 to allowance.

NEW CLAIMS:

New claims 25-28 are added by the present Amendment. It is noted that the value "280 milli-Ohms or more" in lines 2 and 3 of new claim 27 is not *explicitly* cited in the present specification. However, this value has been derived from values in the specification as originally filed. Specifically, page 6, lines 20 to 22 of the original application discloses an embodiment in which the electrode is an elongate tube made of titanium sub oxide with a volume resistivity of 20 milli-Ohms / cm and having an outer diameter of 18 millimeters and in inner diameter of 12 millimeters. The electrode of the invention may be 200 mm in length. See page 3, paragraph 1 and claim 8 of the PCT application. The equation for the cross-sectional area of the electrode is π x (outer radius^2 - inner radius$^{2)}$ or π x (0.9 x 0.0 - 0.6 x 0.6) = 1.41 cm^2.

The resistance of the electrode is the volume resistivity times the length divided by the cross sectional area. Thus, the resistance is $20 \times 10^{-3} \times 20 \div 1.41$ which is substantially equal to 28 milli-Ohms.

It is asserted that these new claims are allowable over the prior art of record. It is therefore respectfully requested that the Examiner pass claims 25-28 to allowance.

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT:

A Supplemental Information Disclosure Statement is also filed together with this Amendment. In the Supplemental Information Disclosure Statement, U.S. Patent Nos. 4,154,667 (Pohto et al.) and 4,033,849 (Pohto et al.) are cited. The Pohto et al. patents each disclose a titanium box structure with springy members 32 (FIG. 6 of the '667 patent) and 24 (FIG. 2 of the '849 patent) in contact with the sides of the box structure. Titanium may develop a thin oxide coating when used as an anode. However, neither Pohto patent discloses a hollow body of low conductivity material and connection means for causing a substantially uniformly distributed flow of current as disclosed in claim 13 of the present patent application.

For at least the reasons set forth above, it is respectfully submitted that the above-identified application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are respectfully requested.

Should the Examiner believe that anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

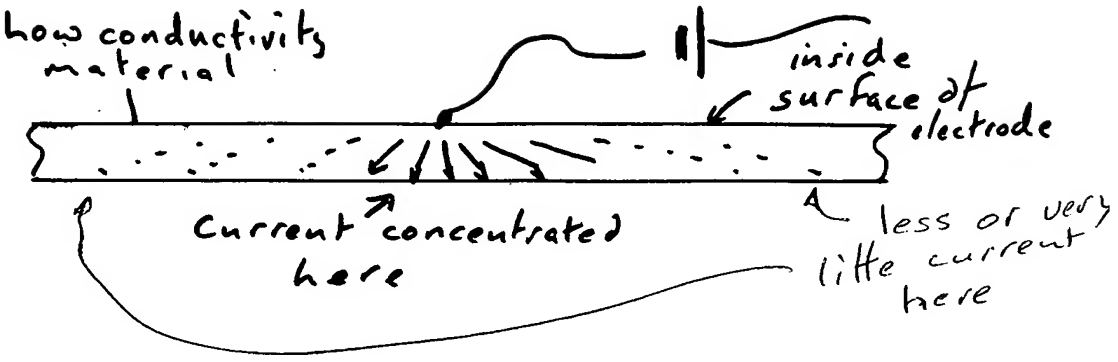
April 14, 2005

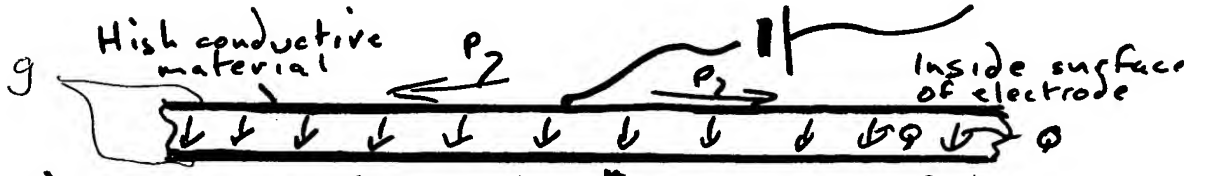
By: _____

Gary A. Greene
Registration No. 38,897
Customer No. 03000
(215) 567-2010
Attorneys for Applicant

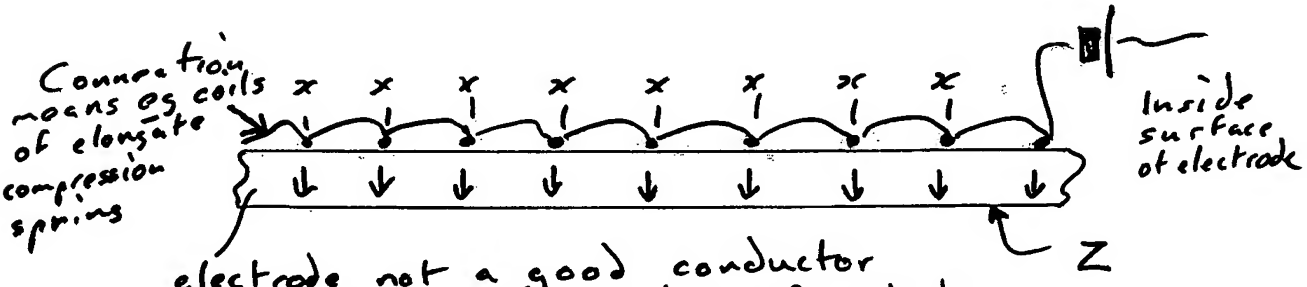
Please charge or credit our Account No. 03-0075 as necessary to effect entry and/or ensure consideration of this submission.

Enclosure: Three Month Extension of Time
Appendix
Supplemental IDS





Hayfield current flows along (P and) across g electrode via coatings of g.



electrode not a good conductor but distributed plurality of contacts at x ensures even distribution of current through to electrode surface z

Invention

APPENDIX